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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/879,870	06/13/2001	William M. Appleman	82,282	4961

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EXAMINER

MENON, KRISHNAN S

ART UNIT

PAPER NUMBER

1723

DATE MAILED: 04/30/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/879,870	APPLEMAN ET AL.	
	Examiner Krishnan S Menon	Art Unit 1723	
<i>-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --</i>			
<b>Period for Reply</b>			
<b>A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.</b>			
<ul style="list-style-type: none"> <li>- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.</li> <li>- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.</li> <li>- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.</li> <li>- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).</li> <li>- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).</li> </ul>			
<b>Status</b>			
1) <input checked="" type="checkbox"/> Responsive to communication(s) filed on <u>24 March 2003</u> .			
2a) <input type="checkbox"/> This action is <b>FINAL</b> .		2b) <input checked="" type="checkbox"/> This action is non-final.	
3) <input type="checkbox"/> Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i> , 1935 C.D. 11, 453 O.G. 213.			
<b>Disposition of Claims</b>			
4) <input checked="" type="checkbox"/> Claim(s) <u>1-7</u> is/are pending in the application.			
4a) Of the above claim(s) _____ is/are withdrawn from consideration.			
5) <input type="checkbox"/> Claim(s) _____ is/are allowed.			
6) <input checked="" type="checkbox"/> Claim(s) <u>1-7</u> is/are rejected.			
7) <input type="checkbox"/> Claim(s) _____ is/are objected to.			
8) <input type="checkbox"/> Claim(s) _____ are subject to restriction and/or election requirement.			
<b>Application Papers</b>			
9) <input type="checkbox"/> The specification is objected to by the Examiner.			
10) <input type="checkbox"/> The drawing(s) filed on _____ is/are: a) <input type="checkbox"/> accepted or b) <input type="checkbox"/> objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).			
11) <input type="checkbox"/> The proposed drawing correction filed on _____ is: a) <input type="checkbox"/> approved b) <input type="checkbox"/> disapproved by the Examiner. If approved, corrected drawings are required in reply to this Office action.			
12) <input type="checkbox"/> The oath or declaration is objected to by the Examiner.			
<b>Priority under 35 U.S.C. §§ 119 and 120</b>			
13) <input type="checkbox"/> Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) <input type="checkbox"/> All   b) <input type="checkbox"/> Some * c) <input type="checkbox"/> None of: 1. <input type="checkbox"/> Certified copies of the priority documents have been received. 2. <input type="checkbox"/> Certified copies of the priority documents have been received in Application No. _____ . 3. <input type="checkbox"/> Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received.			
14) <input type="checkbox"/> Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application). a) <input type="checkbox"/> The translation of the foreign language provisional application has been received.			
15) <input type="checkbox"/> Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.			
<b>Attachment(s)</b>			
1) <input type="checkbox"/> Notice of References Cited (PTO-892)		4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ .	
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)		5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)	
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .		6) <input type="checkbox"/> Other: _____ .	

Art Unit: 1723

## **DETAILED ACTION**

This office action is made non-final in consideration of applicant's argument that the § 112 para 2 rejection of claim 1 was not applicable to dependent claim 2 in applicant's response to advisory action of 3/24/03. All pending claims dependent on claim 1 are, therefore, rejected in this office action on §112 para 2.

Claims 1-7 are pending. Newly submitted claim 8 was cancelled.

### *Drawings*

The corrected or substitute drawings were received on 9/25/02. These informal drawings are acceptable for examination purposes. Formal drawings will be required when the application is allowed.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the phrases "... sealed chamber within the module housing through which the contaminate-laden fluid is conducted externally of the processing elements; ....filtered

Art Unit: 1723

fluid is laterally withdrawn ..." reads as if the fluid is circulated within the chamber that contains the processing elements, external to the processing elements, and the filtrate comes out laterally of the chamber or the elongated processing elements. How would the filtrate come out from the same side of the processing element or chamber where the contaminate-laden fluid is conducted? For examination, the examiner assumes the contaminated fluid is flowing through the processing elements, and the filtrate is coming out laterally of the processing elements into the chamber that contains the processing elements.

### *Claim Rejections - 35 USC § 102/103*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-4 and 6 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Funatsu (US 6,284,451).

Funatsu (451) discloses elongated filter membrane elements (hollow-fibers) with a spacer (3, Fig 1) for adjustably spacing the elements, holding elements in a bundled condition (2, Fig 1), pre-assembled means for establishing a sealed chamber within the module housing (1, Fig 1), means for taking a contaminated fluid through housing (7, Fig 1), drain for discharge of clean fluid (6, fig 1), pair of axially spaced rings (4, fig 1) in radial sealing contact with housing, epoxy resin cured seal

Art Unit: 1723

member (col 7: 23-31), and the holding means retained within the seal ring before assembly to housing (3,4, fig 1). The pre-assembled means is adjustable before bundling in epoxy, then curing the epoxy, and then assembling in the housing (all fig 1). Claims 1-4 and 6 are anticipated by, or in the least, obvious over the reference as best understood under the preceding 35 USC 112, 2<sup>nd</sup> paragraph, indefiniteness.

2. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Garcera et al (US 5,916,440).

Garcera (440) teaches a membrane module having elongated process elements (1-fig 1), holding means for keeping the elements in a bundled condition ( 21-fig 1), sealed chamber (inside 1-fig 1, seal 25), spacer means (24-fig 1) maintaining the elements laterally separated, fluid is conducted through the elements (arrow 3 – fig 1). Housing has a drain means (4-fig 1) for removing cleaned fluid as in instant claim 2, and a pair of seal rings for sealing the chamber with the housing (25-fig 1; only one shown in fig). Claims 1-3 are anticipated by, or in the least, obvious over the reference as best understood under the preceding 35 USC 112, 2<sup>nd</sup> paragraph, indefiniteness.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1723

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Funatsu (451) in view of Okumura (US 4,668,401).

Funatsu (451), while disclosing a hollow fiber bundle in a housing with a fiber spacer, tube sheets made by curing an epoxy formulation after assembly, attached to the ends of the fiber sealingly attached to the housing, with capability for cleansing contaminated water, does not disclose the hollow fiber membrane module as being useful for oily bilge water. Okumura (US 4,668,401) teaches a similar hollow fiber membrane module for use in cleaning-oil contaminated water (col 8: 59-68). It would be obvious to one of ordinary skill in the art at the time of invention to chose a hollow-fiber module as taught by Funatsu (451) for cleaning oily water as taught by Okumura (401) as equivalent product for equivalent application.

2. Claims 4 - 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garcera (440) in view of Okumura (401).

Garcera (440) teaches all the elements of claim 4-7 as given in claim 1 above, including ultrafiltration (col 1 lines 9-12), except the use of epoxy as sealant and use of the module for filtering oily bilge water. Okumura (401) teaches use of epoxy (4-fig 1) as holding means for the elongated elements (2-FIG 1) instead of the seal (24 – FIG 1 Garcera) in the holding ring (21-fig 1) of Garcera

(440). Okumura also teaches the filtration of oily bilge-water (col 8 lines 59-68). It would be obvious to one of ordinary skill in the art at the time of invention to use the teachings of Okumura (401) and have epoxy for the seal of Garcera (440) as alternate but improved seal, and use the Garcera (440) module for filtering oily bilge water because the Garcera module could be used for ultrafiltration (col 1 lines 9-12), and Okumura teaches use of ultrafiltration for filtering oily bilge water (col 8: lines 59-68).

### ***Response to Arguments***

Applicant's arguments filed on 3/24/03 in the 'Response to Advisory Action' has been considered by the examiner but are not persuasive. The 35 USC 112, 2<sup>nd</sup> paragraph, indefiniteness rejection of claim 1 is not overcome in claim 2 because of the added limitation in claim 2 (or other dependent claims) as the applicant argues. The recitation in claim 1, which is repeated in claim 2, "...module housing through which the contaminated fluid is conducted *externally* of the processing elements; ...the sealed chamber through which the filtered fluid is laterally withdrawn as a cleansed portion of the contaminate laden fluid;..." reads that the contaminate laden fluid is conducted on the shell side of the module (because it says 'external to the processing elements') and the cleansed portion also is taken out from the shell side (because it says 'laterally withdrawn' ... through the 'drain means', and the drain means is situated in the shell side of the module). How can one put the contaminate-laden fluid on the external side of the processing elements and also take the cleansed portion from the external side of the processing elements? Where does the separation happen? The argument that "...the filtering of the contaminate-laden fluid by *axial flow between* the processing elements and lateral filtration flow therethrough..." is also unclear as to how the filtration happens; and 'axial flow between the processing elements' is not recited in the claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S Menon whose telephone number is 703-305-5999. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L Walker can be reached on 703-308-0457. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Krishnan Menon  
Patent Examiner  
April 29, 2003

  
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SUPERVISORY PATENT EXAMINER  
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